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INTERSTATE COMMERCE COMMISSION
WASHINGTON

REPORT NO. 3616
SOUTHERN RAILWAY COMPANY
IN RE ACCIDENT
AT GREENWOOD, S. C., ON
MARCH 9, 1955

SUMMARY

Date:	March 9, 1955
Railroad:	Southern
Location:	Greenwood, S. C.
Kind of accident:	Derailment
Train involved:	Passenger
Train number:	17
Engine number:	Diesel-electric unit 2041
Consist:	4 cars
Estimated speed:	30 m. p. h.
Operation:	Timetable and train orders
Track:	Single; tangent; 0.05 percent descending grade westward
Weather:	Clear
Time:	11:25 p. m.
Casualties:	2 injured
Cause:	Malicious tampering with switch

INTERSTATE COMMERCE COMMISSION

REPORT NO. 3616

IN THE MATTER OF MAKING ACCIDENT INVESTIGATION REPORTS
UNDER THE ACCIDENT REPORTS ACT OF MAY 6, 1910.

SOUTHERN RAILWAY COMPANY

April 11, 1955

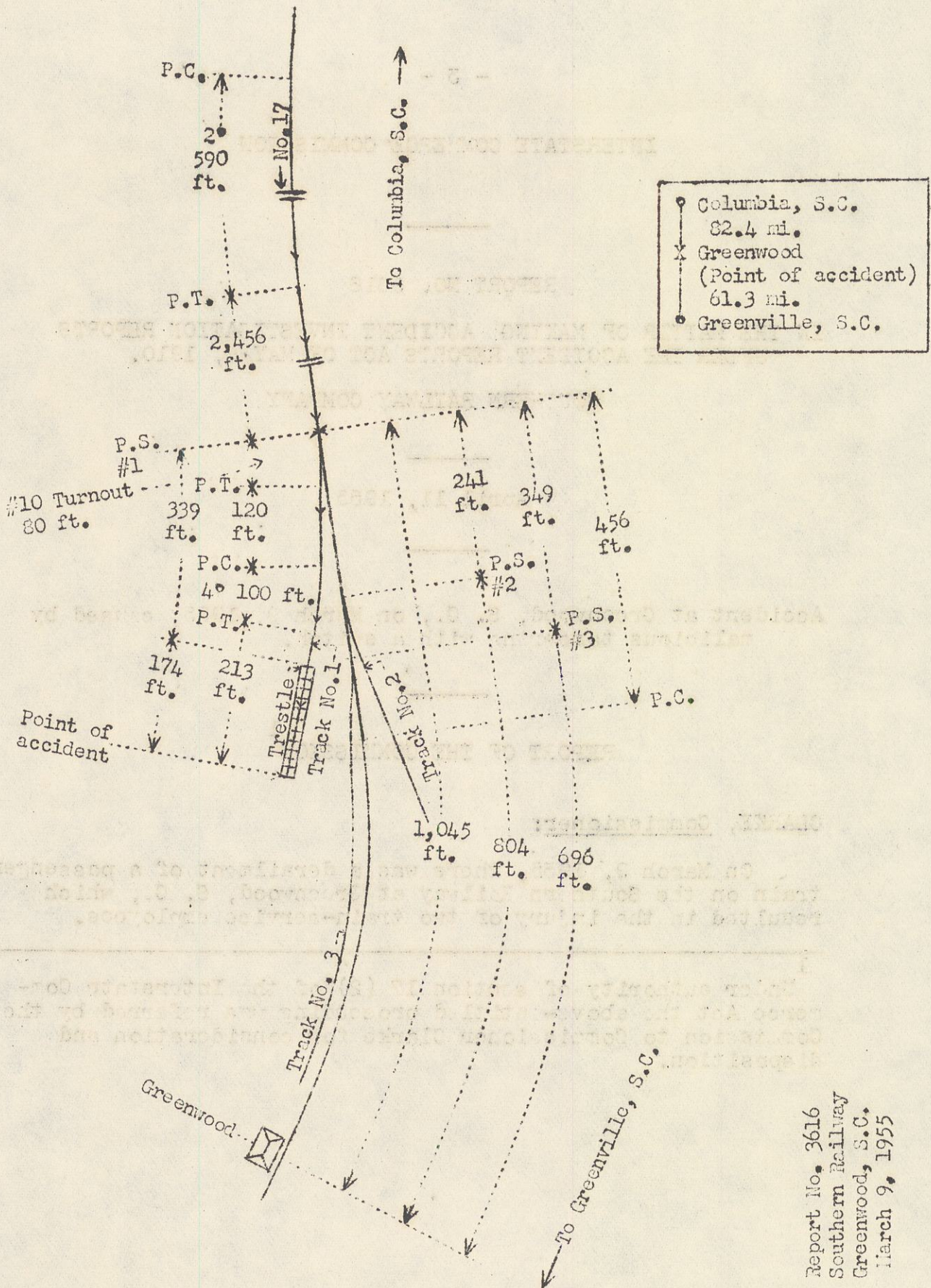
Accident at Greenwood, S. C., on March 9, 1955, caused by
malicious tampering with a switch.

REPORT OF THE COMMISSION¹

CLARKE, Commissioner:

On March 9, 1955, there was a derailment of a passenger train on the Southern Railway at Greenwood, S. C., which resulted in the injury of two train-service employees.

¹ Under authority of section 17 (2) of the Interstate Commerce Act the above-entitled proceeding was referred by the Commission to Commissioner Clarke for consideration and disposition.



Report No. 3616
Southern Railway
Greenwood, S.C.
March 9, 1955

Location of Accident and Method of Operation

This accident occurred on that part of the Columbia Division extending between Columbia and Greenville, S. C., 143.7 miles. In the vicinity of the point of accident this is a single-track line, over which trains are operated by timetable and train orders. There is no block system in use. At Greenwood, 82.4 miles west of Columbia, three auxiliary tracks diverge from the main track at points, respectively, 1,045 feet, 804 feet, and 696 feet east of the station. From east to west these tracks are designated in this report as tracks Nos. 1, 2, and 3. The switches are facing-point for west-bound movements. Track No. 1, a spur track 513 feet in length, diverges toward the north. In this vicinity the main track is laid on a fill, and this fill also underlies the east end of track No. 1 for a distance of 339 feet from the switch. The west end of track No. 1 is laid on a pile trestle 174 feet in length and is used for unloading coal. At the west end of the trestle the track is 18 feet 5 inches above the level of the ground. The accident occurred at the west end of track No. 1. From the east on the main track there is a 2° curve to the left 590 feet in length and a tangent 2,456 feet to the switch at the east end of track No. 1 and 456 feet westward. From the east on track No. 1 there are, in succession, a No. 10 turnout to the right 80 feet, a tangent 120 feet, a 4° curve to the right 100 feet, and a tangent 213 feet to the end of the track. The grade on the main track is 0.05 percent descending westward at the switch. From the east on track No. 1 the grade is, successively, 0.47 percent descending 100 feet, 3.02 percent ascending 200 feet, 2.54 percent ascending 50 feet, and level 163 feet to the end of the track.

The switch stand at the east end of track No. 1 is of the ground-throw intermediate-stand type and is located 9 feet 3 inches north of the center-line of the track. When the switch is in normal position a circular white banner 14 inches in diameter is displayed at right angles to the track. When the switch is lined for entry to track No. 1 a rectangular red banner 29 inches in length and 12 inches in height is displayed at right angles to the track. The centers of the banners are 6 feet 1-9/16 inches above the level of the tops of the ties. The operating lever is secured in either normal or reverse position by a keeper, and when the switch is in normal position the latch which secures the lever in that position is locked with a standard switch lock. The switch stands at the switches of tracks Nos. 1, 2, and 3 are not equipped with switch lamps.

Hand-operated derails are located in each of the three auxiliary tracks at points from 161 feet to 192 feet west of the switches. The normal position of each derail is in derailing position, and the operating levers are secured by standard switch locks. The derails are not equipped with switch targets or switch lamps.

The maximum authorized speed for passenger trains in the vicinity of the point of accident is 50 miles per hour.

Description of Accident

No. 17, a west-bound first-class passenger train, consisted of Diesel-electric unit 2041, one express car, one mail-baggage car, one coach, and one sleeping car, in the order named. All cars were of all-steel construction. This train departed from Columbia, the last open office, at 8:30 p. m., on time. While it was moving at an estimated speed of 30 miles per hour it was diverted to track No. 1 at Greenwood, and the locomotive and the front truck of the first car were derailed at the west end of the track.

The front end of the locomotive dropped to the ground and stopped in line with the track at a point 47 feet west of the west end of the trestle. The rear end was supported by the draft-gear housing, which was resting on top of the end of the trestle. The first car stopped in line with the track, with the front end against the rear end of the locomotive. The locomotive was somewhat damaged, and the first car was slightly damaged.

The fireman jumped from the locomotive prior to the derailment and sustained injuries which resulted in subsequent death. The engineer also was injured.

The weather was clear at the time of the accident, which occurred about 11:25 p. m.

Discussion

As No. 17 was approaching the point where the accident occurred the enginemen were maintaining a lookout ahead from their positions in the control compartment of the locomotive. The members of the train crew were in the cars of the train. The headlight was lighted brightly. The brakes of the train had been tested and had functioned properly when used en route. The engineer said that as the train approached Greenwood the speed was reduced from 45 miles per hour to about 30 miles per hour by a service application of the brakes and the brakes were released when the locomotive was about 300 feet east of the switch at the east end of track No. 1. He said that one of the switch targets beyond track No. 1 appeared to be more clearly visible in the rays of the headlight than the switch

target at track No. 1, and he saw one of these targets before he saw the target at track No. 1. When he saw the target it indicated that one of the switches beyond track No. 1 was open. He then saw the target at track No. 1, and it indicated that this switch also was open. He made an emergency application of the brakes as the locomotive was passing the switch. He said that the brake application was effective and the speed was considerably reduced before the locomotive reached the end of the trestle. He thought the brake application would have stopped the train within an additional distance of about 75 feet.

After the accident occurred the switches at the east ends of all three auxiliary tracks were found to be lined for entry to the auxiliary tracks. The switch points were undamaged. The shackle was broken from the switch lock at the switch at the east end of track No. 1 and was hooked through the latch which secures the operating lever. The switch locks at each of the other two switches were unlocked and hanging in the latches. The switch locks had been removed from the derails on tracks Nos. 1 and 2, and each of these derails was in non-derailing position. The derail on track No. 3 was locked in derailing position. The two switch locks which had been removed from the derails were recovered later. These locks and the locks on the three switches all bore similar marks which indicated that they had been forced open by being struck with a heavy metal object.

The investigation disclosed that the three switches involved were unlocked and opened by an unknown person or persons at some time after 5 p. m. on the day of the accident. These switches were used between 1:45 p. m. and 4:15 p. m. by the crew of a local freight train. The conductor said that when the crew went off duty, at 4:15 p. m., all switches and derails were lined and locked in normal position. The crew of another train went on duty at 4:30 p. m. and performed switching on track No. 3. The conductor said that when the switching was completed the switch and derail were lined and locked in normal position. This crew did not operate the other two switches, but after the switching was completed the train made an east-bound main-track movement and then a west-bound main-track movement over the three switches. The switches were in normal position at 5 p. m., the time the west-bound movement was made. At the time this investigation was completed the identity of the person or persons who opened the switches had not been determined. The track supervisor in this territory has been assigned to the territory since August 1953. He said that during this period there had been no indications of malicious tampering with switches prior to the day of the accident.

On March 12, 1953, observations were made to ascertain the distance at which the position of the switch at the east end of track No. 1 can be determined from an approaching west-bound locomotive. It was dark at the time the observations were made, and weather conditions were similar to those which prevailed at the time of the accident. A locomotive of the same type as the locomotive of No. 17 was used in these tests. An oil-burning switch lamp was placed on the switch stand, and it was found that with the headlight lighted brightly the red aspect of the switch lamp was visible at a distance of 2,550 feet. The switch lamp was then extinguished, and it was found that the red switch target was visible at a distance of 750 feet and the switch points were visible at a distance of 250 feet. If switch lamps had been used on the switch stands at these main-track switches at the time of the accident, the position of the switch involved could have been determined from a greater distance or the absence of a light would have been noticeable, and it is probable that the accident could have been averted.

Cause

This accident was caused by malicious tampering with a switch.

Dated at Washington, D. C., this eleventh day of April, 1955.

By the Commission, Commissioner Clarke.

(SEAL)

HAROLD D. McCOY,

Secretary.